



**National
Transportation
Safety Board**

Enhancing Safety: Eliminating Impaired Driving and Managing Fatigue

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REACHING ZERO

Actions to Eliminate Substance-Impaired Driving



NTSB

Carrollton, KY (May 14, 1988)



67 passengers, 27 fatalities, 34 serious injuries; driver: .28 BAC



NTSB

Every Year . . .

- ~ 10,000 lives lost



NTSB

Every Year . . .

- 173,000 injuries
 - 27,000 are life-altering



Every Hour . . .

- 1 life lost
- 20 injuries



2011

FATALITIES

(the most recent government statistics available)

9,878 in *impaired driving* crashes

800 in marine accidents

759 in rail accidents

494 in aviation accidents



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NTSB

Separate



Drinking \longleftrightarrow Driving



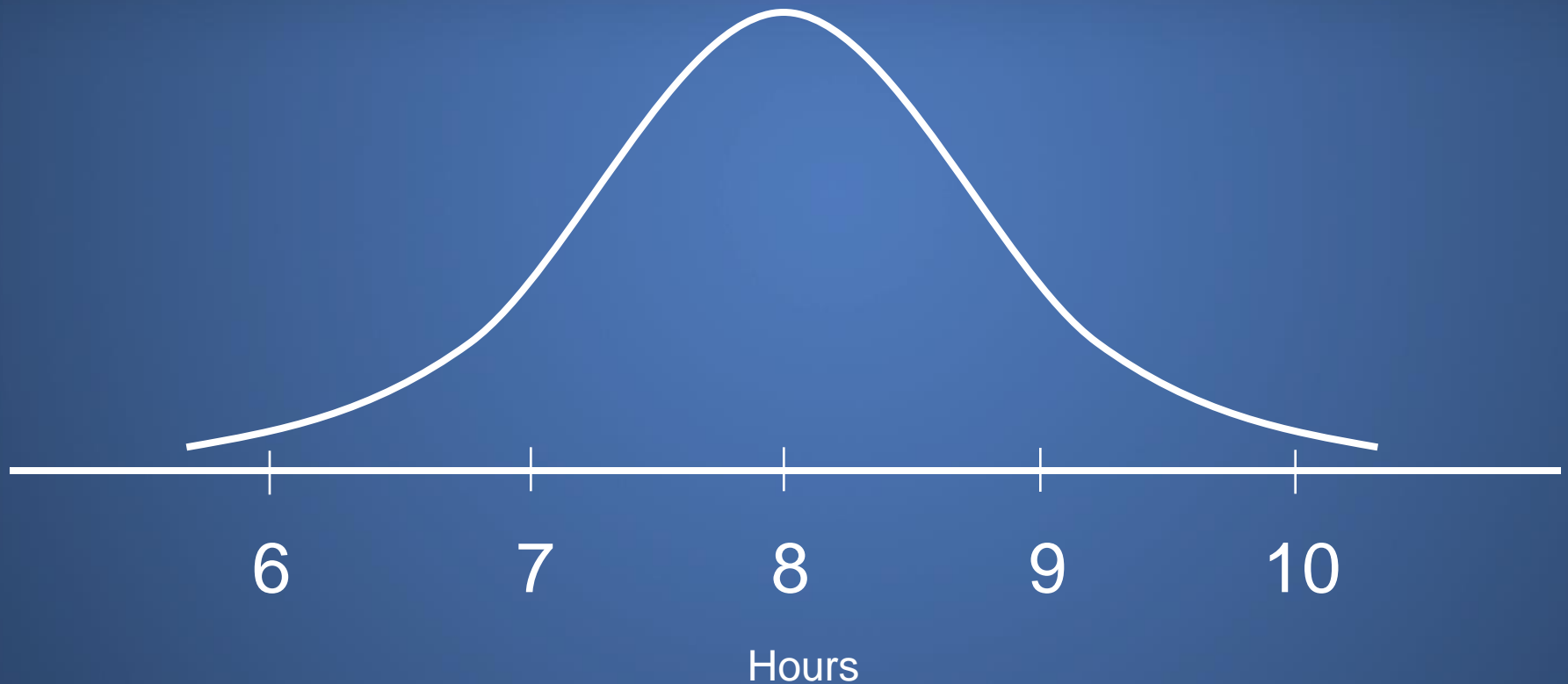
NTSB

Challenges of a 24/7 Society



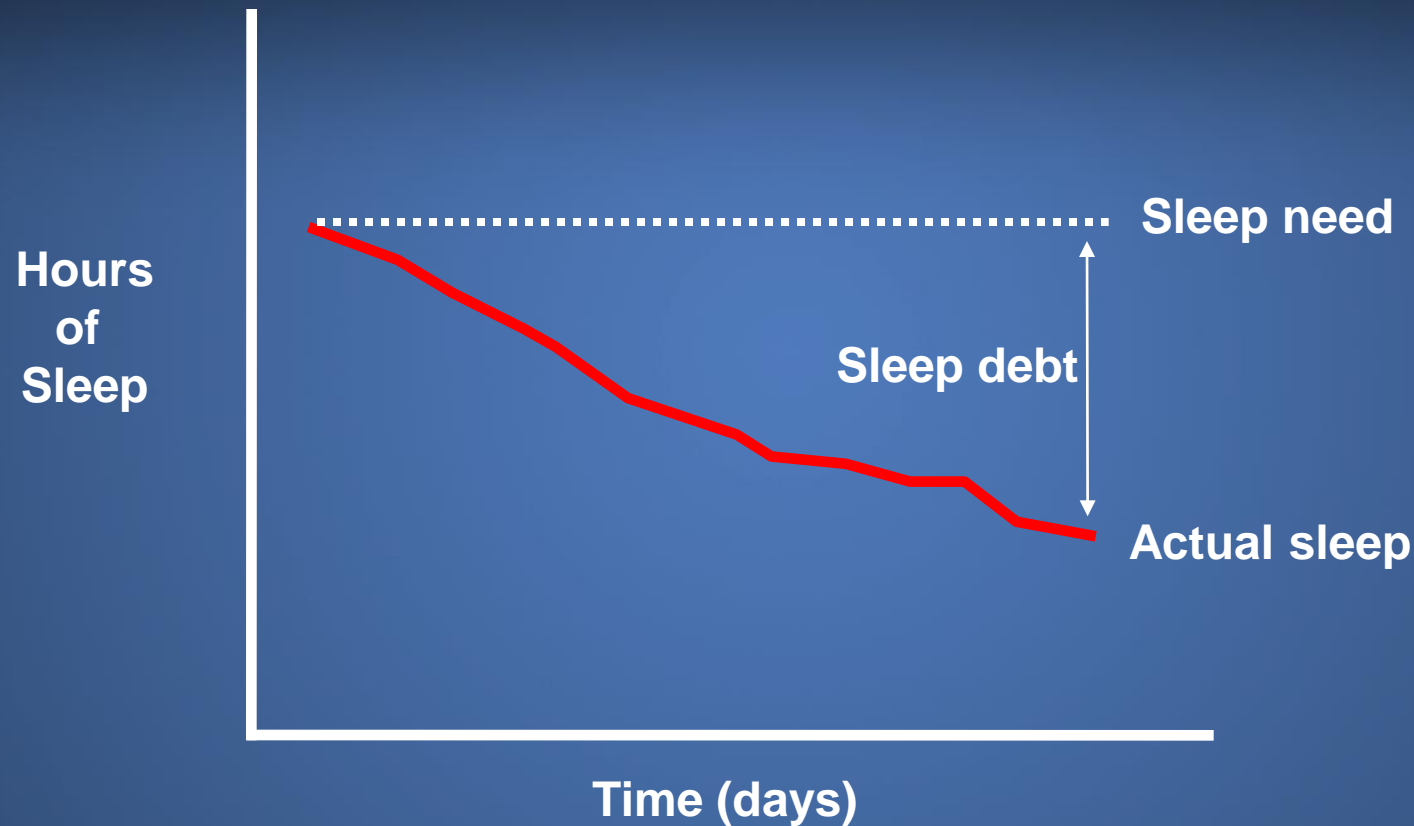
NTSB

Sleep Requirement



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Cumulative Sleep Debt



$\text{Sleep Need} - \text{Actual Sleep} = \text{Sleep Debt}$

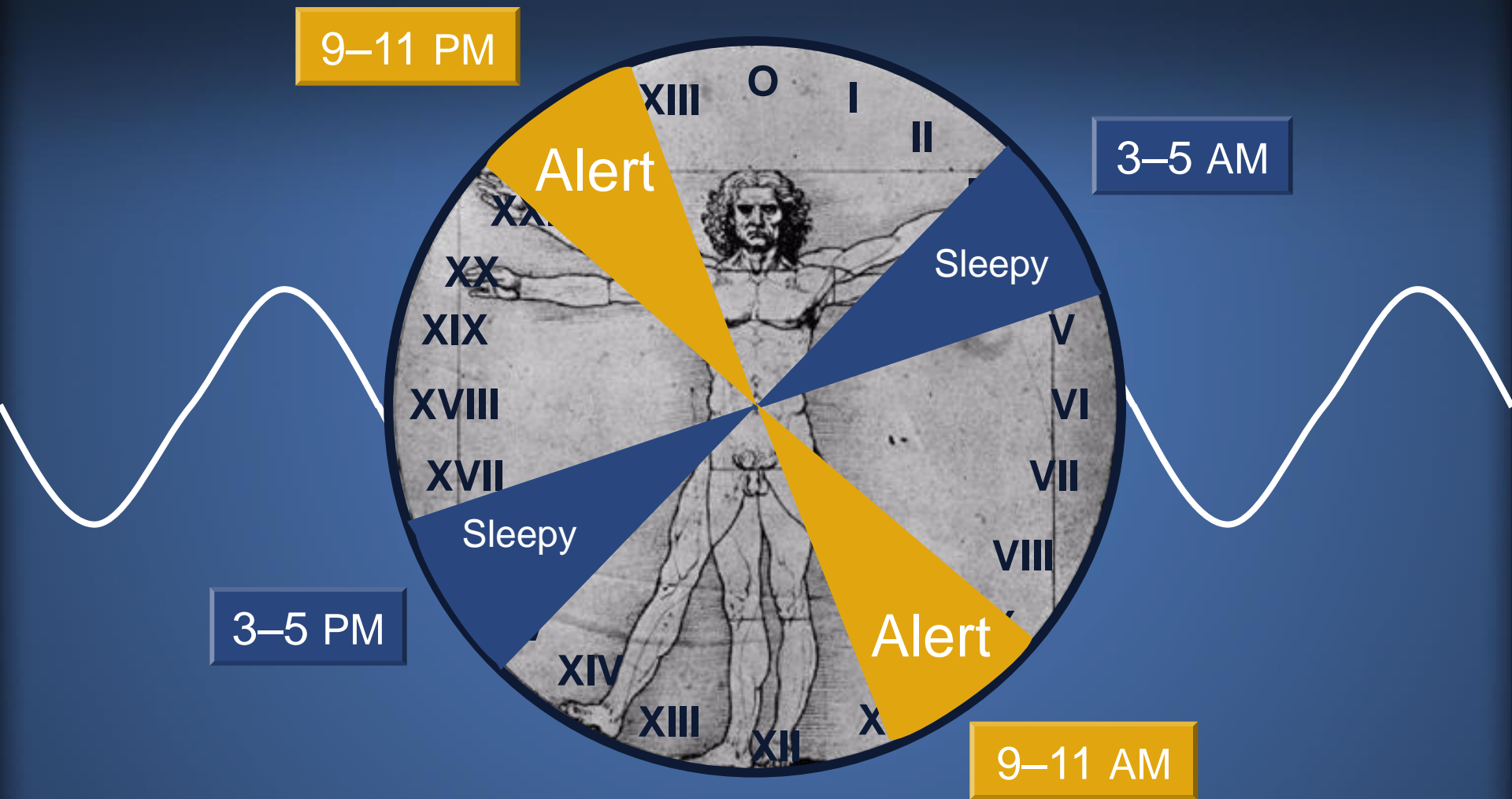
Sleep debt grows cumulatively over time



NTSB

Sleep Loss and Alcohol: Equivalents

<u>Sleep loss (hrs)</u>	<u>12oz Beers</u>	<u>BrEC%</u>
2	2 - 3	.045%
4	5 - 6	.095%
6	7 - 8	.102%
8	10 - 11	.190%



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Fatigue Risks

- degraded 20 – 50%+:

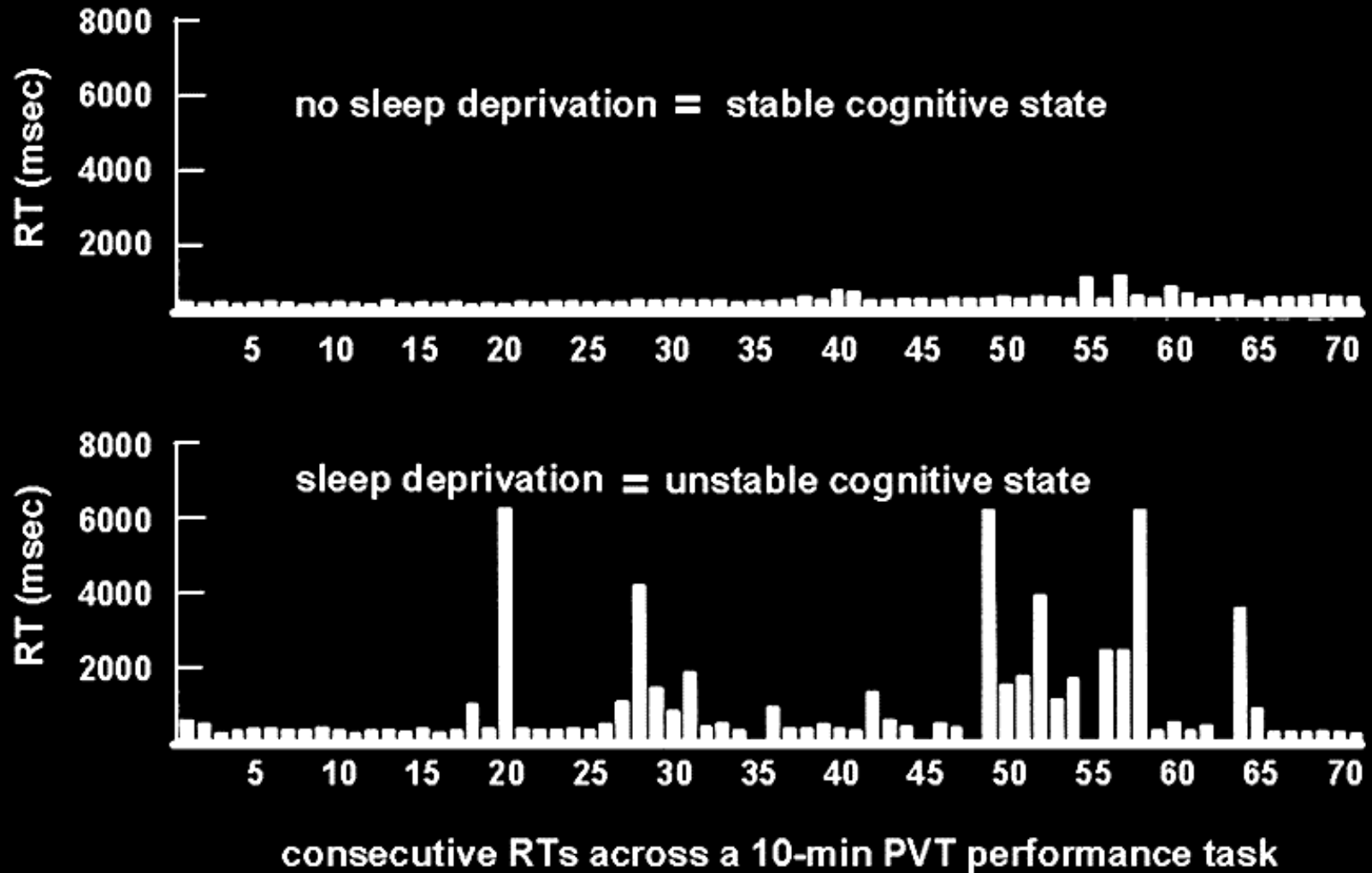
- reaction time
- memory
- communication
- situational awareness
- judgment
- attention
- mood

- increased:

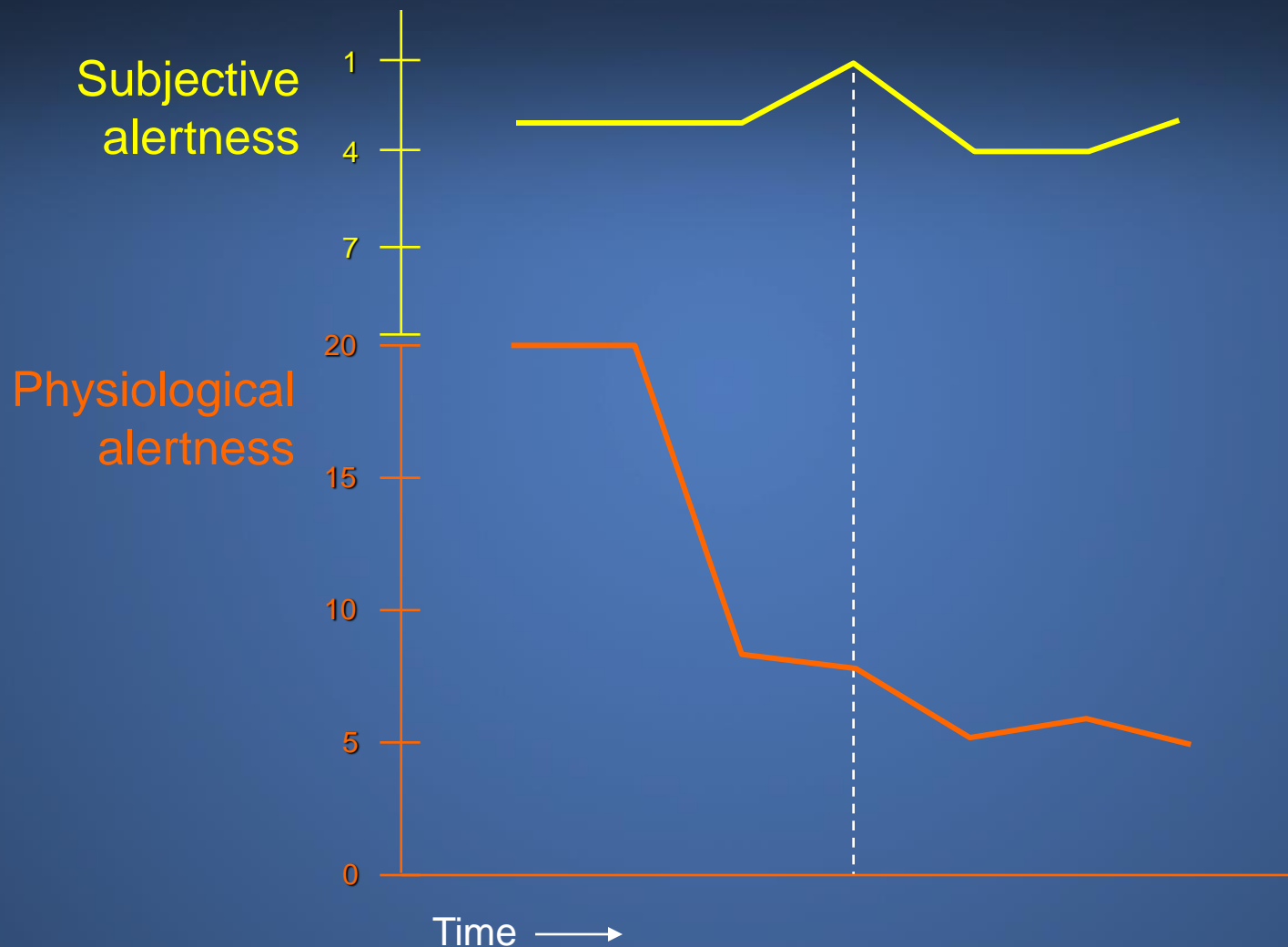
- irritability
- apathy
- attentional lapses
- microsleeps



Fatigue and Reaction Times



Alertness Reports Often Inaccurate



Adapted from Sasaki et al., 1986



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Good sleep, safe travels.



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